

# A TOTAL GUIDE TO AUDIO, VIDEO AND STORAGE MEDIA



# WELCOME

Welcome to Fujifilm's pocket-sized Audio, Video and Storage Media Guide. Inside you'll find everything you need to know about our extensive range of audio and video products. From CDs, DVDs and MiniDiscs™ right through to video and camcorder cassettes – it's all in here.

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## CD Optical Disc

Fast-access storage with Fujifilm's superior CD-R and CD-RW range.



## DVC + 8cm DVD

Next generation tape for next generation digital camcorders.



### DVD Optical Disc

Fujifilm's DVD range – catering for all your video and data needs.



### Magnetic Disk

Floppy & Zip Disks provide an easy storage solution for every application.



### VHS Video Tapes

Fujifilm's VHS tape range covers all the bases.



### 8mm Tapes

For 8mm tape, put Fujifilm in the frame.



### VHS-C Video Tapes

Fujifilm's VHS camcorder tape puts you in the picture.



### Audio Media

Fujifilm's digital audio range makes sound sense.



# OPTICAL AND MAGNETIC DISC RANGE

Fujifilm's optical disc range offers reliable, secure, fast-access storage with superb quality and durability – making our CD and DVD range your only choice.





## CD-R

Fujifilm CD-Recordable (CD-R) discs offer advances in write-once optical disc production making them a superior choice.

- CD-R 25 Disc Spindle (700MB 52x)
- CD-R 50 Disc Spindle (700MB 52x)
- CD-R 100 Disc Spindle (700MB 52x)
- CD-R x10 Pack Jewel Case (700MB 52x)
- CD-R x10 Pack Slim Case (700MB 52x)
- CD-R Colour x10 Pack Slim Case
- CD-R Colour 25 Disc Spindle



## Photo Disc CD-R

If you value your photos in digital form, then Photo Disc CD-R from Fujifilm is the ideal choice. With its unique black protection layer, Photo Disc CD-R is specially designed to resist the harmful effects of ultra-violet and solar radiation to deliver a CD-R that's ten times more stable than normal. Protect your precious memories, and ensure that you'll enjoy brilliant image quality for decades to come.

- Photo Disc CD-R x10 Pack
- Photo Disc CD-R x3 Pack

## Specifications

	CD-R	Photo Disc CD-R		CD-R	Photo Disc CD-R
Format	Orange Book Part II		Outer diameter	120 ± 0.3 mm	120 ± 0.3 mm
Capacity*	700MB	700MB	Inner diameter	15 + 0.1/ -0.0 mm	15 + 0.1/ -0.0 mm
Speed	52x	52x	Thickness	1.2 + 0.3/-0.1	1.2 + 0.3/-0.1
Linear velocity	1.2 m/s	1.2 m/s	Recording areas	44.7 mm – 118 mm (max)	
Track pitch	1.5 µm	1.5 µm	Optimum write power	6-7 (Laser W/L = 790 nm, Lens = 0.5 mw)	
Substrate	Polycarbonate	Black protection shield	Block error	Less than 20 eps	
Recording layer	Organic Dye		Jitter	22–23 ns	22–23 ns
*The value is in the case of mode 1 recording, capacity varies by the format in use.			Number of readings	More than 10 <sup>6</sup> times	

# CD AND DVD-RAM

## CD-RW



Fujifilm's CD-RW products provide similar positive characteristics to the CD-R, but also offer the enormous advantage of rewritability. Information can be written and re-written freely. CD-RW discs are ideally suited for data storage usage, with a higher flexibility of your personal data management guaranteed.

- CD-RW 4x 700MB x10 Pack
- CD-RW 4x-12x 700MB x10 Pack

## Specifications

	CD-RW 4x-10x	DVD-RAM		CD-RW 4x-10x	DVD-RAM
Capacity	700MB	4.7GB / 9.4GB <sup>†</sup>	Inner diameter	15 ± 0.1 mm	15 mm
Track pitch	1.5 µm ± 0.1µm	–	Thickness	1.2 +0.3/ -0.1 mm	1.2 mm (0.6 x 2)
Linear velocity	2.4 m/s/4.8-12.0 m/s	6 m/s	Recording areas	50 ~ 116 mm	–
Substrate	Polycarbonate	Phase-change-alloy	Overwrite cyclability	More than 1,000 times	–
Recording layer	Phase Change Material	Polycarbonate	Number of readings	More than 10 <sup>6</sup> times	–
Reflectivity (R <sub>top</sub> )	15-25%	–	Data transfer rate		10.08 Mbps
Track eccentricity	Less than 70 µm	–	Laser wavelength recording		650 nm
Tilt	Less than 0.6°	–	Laser wavelength reproduction		650 nm
Outer diameter	120 ± 0.3 mm	120 mm	Reflective capacity		15-25%



## DVD-RAM

Optical storage reaches new levels of rewritable performance and compatibility with Fujifilm DVD-RAM. It's now possible to record 4.7GB on a single-sided DVD-RAM and 9.4GB on a double-sided DVD-RAM. The DVD-RAM format is ideal for the combined storage of a variety of data, from mega-pixel digital photos, to multimedia files.

- DVD-RAM 2-3x 4.7GB x5 Pack
- DVD-RAM WOC\* 2-3x 4.7GB x5 Pack
- DVD-RAM 2-3x 9.4GB x5 Pack

# DVD DUAL LAYER + LABELFLASH DVD-R



## DVD+R Dual Layer

DVD+R Dual Layer: With two recording layers on one side of the disc DVD+R Dual Layer offers a capacity of 8.5GB of data or 4 hours video.

- DVD+R Dual Layer x3 pack  
2.4x 8.5GB



## Labelflash™ DVD-R

Labelflash™ DVD-R discs have a specialized dye layer located 0.6mm below the surface of the labelling side. This allows you to label your DVD with high resolution pictures and text using a Labelflash™ compliant DVD writer.

You can choose picture burning time from five to 20 minutes, in accordance with your quality needs.

## Specifications

	DVD+R Dual Layer	Label Flash™ DVD-R		DVD+R Dual Layer	Label Flash™ DVD-R
Video length	240 mins	120 mins	Track Pitch	0.74µm	0.74µm
Sides used	1	1	Optical Characteristics		
Speed	8x	16x	Reflectivity	45-85%	45-80%
Capacity	8.5GB	4.7GB	Reflective capacity	>60% (Rtop)	>60% (Rtop)
Dimensional Properties			Physical Properties		
Minimum Pit Length	0.4µm	0.4µm	Recording Layer	Organic Cyanine Dye	Organic Cyanine Dye
Thickness	1.2mm (0.6x2)	1.2mm (0.6x2)	Recording/Playback Signal Characteristics		
Disc diameter	120mm	120mm	Wavelength	655nm	650nm
Disc centre hole	15mm	15mm			



## DVD-R

Combining high quality recording and high-level durability for storage and long archival life. Suitable for drives supporting the DVD-R and DVD-RW format, and dual format drives, offering either 120 minutes\* of video or 4.7GB of data storage capacity.

- DVD-R 4.7GB Jewel Case
- DVD-R 4.7GB Spindle
- DVD-R 4.7GB Video Box
- DVD-R Colour 4.7GB Jewel Case



## DVD-RW

Can be recorded, erased and re-recorded more than 1,000 times without any loss of quality. Suitable for drives supporting the DVD-R and DVD-RW format, and dual format drives, offering either 120 minutes\* of video or 4.7GB of data storage capacity.

- DVD-RW 4.7GB Jewel Case
- DVD-RW 4.7GB Video Box

## Specifications

	DVD-R	DVD-RW		DVD-R	DVD-RW
Storage capacity	4.7GB	4.7GB	Data transfer rate	11.08 Mbps	11.08 Mbps
Video length*	120 min.	120 min.	Wavelength	Rec 655 nm Play 655 nm	
Sides used	1	1	Reflective capacity	>60% (Rtop)	>60% (Rtop)
Recording material	Polycarbonate		Reflectivity	45-80%	-
Recording medium	Organic	Phase change	Track pitch	0.74 µm	0.74 µm
	Cyanine Dye		Minimum pit length	0.4 µm	0.4 µm
Disc diameter	120 mm	120 mm	Recording speed	8x, 16x	2-4x
Disc centre hole	15 mm	15 mm	*Standard Play		
Thickness	1.2 mm (0.6 x 2)	1.2 mm (0.6 x 2)			
Normal linear speed	3.49 m/s	3.49 m/s			





### DVD+R

Combining high quality recording and high-level durability for storage and long archival life. Suitable for drives supporting the DVD+R and DVD+RW format, and dual format drives, offering either 120 minutes\* of video or 4.7GB of data storage capacity.

- DVD+R 4.7GB Jewel Case
- DVD+R 4.7GB Spindle
- DVD+R 4.7GB Video Box
- DVD+R Colour 4.7GB Jewel Case



### DVD+RW

Can be recorded, erased and re-recorded more than 1,000 times without any loss of quality. Suitable for drives supporting the DVD+R and DVD+RW format, and dual format drives, offering either 120 minutes\* of video or 4.7GB of data storage capacity.

- DVD+RW 4.7GB Jewel Case
- DVD+RW 4.7GB Video Box

## Specifications

	DVD+R	DVD+RW		DVD+R	DVD+RW
Storage capacity	4.7GB	4.7GB	Wavelength	Rec 655 nm Play 655 nm	
Video length*	120 min.	120 min.	Reflective capacity	>60% (Rtop)	>60% (Rtop)
Sides used	1	1	Reflectivity	45-85%	18-30%
Recording material	—	Polycarbonate	Track pitch	0.74 µm	0.74 µm
Recording medium	Organic Cyanine Dye	Phase change	Minimum pit length	0.4 µm	0.4 µm
Disc diameter	120 mm	120 mm	Recording speed	8x, 16x	4-8x
Disc centre hole	15 mm	15 mm	*Standard Play		
Thickness	1.2 mm (0.6 x 2)	1.2 mm (0.6 x 2)			
Normal linear speed	14 m/s	14 m/s			

# PRINTABLE MEDIA

Achieve high quality printing on the surface of your discs with our printable CD and DVD range. The white surface is specially coated to enable fast drying so the ink does not transcribe.



## General

- CD-R Printable Inkjet 25 Spindle
- DVD-R Printable Inkjet 10 or 25 Spindle

## Specifications

	DVD-R	CD-R		DVD-R	CD-R
Format	–	Orange Book Part II	Optimum Write Power	–	6-7(Laser W/L=790nm, Lens=0.5mw)
Capacity	4.7GB	700MB	Block Error	–	Less than 20 eps
Speed	8x	52x/48x	Jitter	–	22-23 ns
Linear velocity	–	1.2m/s	Number of Readings	–	More than 10 <sup>6</sup> times
Track pitch	0.74 µm	1.5µm	Video Length	120 min	–
Substrate	Polycarbonate		Minimum Pit Length	0.4 µm	–
Recording Layer	Organic Cyanine Dye	Organic Dye	Reflectivity	45-85%	–
Outer diameter	120mm	120+/- 0.3mm	Reflective Capacity	>60% (Rtop)	–
Inner diameter	15mm	15 +0.1/-0.0mm	Wavelength	Rec/Play 655 nm	–
Thickness	1.2mm (0.6x2)	1.2 +0.3/-0.1mm	*Standard Play		
Recording Areas	–	44.7mm-118mm (max)			

## Professional

- CD-R Printable Inkjet Pro 100 Spindle
- CD-R Printable Inkjet UV Pro 100 Spindle
- CD-R Printable Thermal Transfer Pro 100 Spindle
- CD-R Printable Re-transfer Pro 100 Spindle
- DVD-R Printable Inkjet Pro 100 Spindle
- DVD-R Printable Thermal Transfer Pro 100 Spindle
- DVD-R Printable Re-transfer Pro 100 Spindle



The easy-to-use, Fujifilm Zip™ disk solves all your data back-up, storage and transport needs. It's perfect for running applications, multimedia presentations, spreadsheets, music and games. Powered by ATOMM Technology, Fujifilm's latest Zip™ disk stores up to 750MB of information.



Fujifilm stands by its commitment to quality with its 100% tested, error-free performance. Backed by a lifetime warranty, Fujifilm's 2HD disks are dependable, durable and reliable. With features such as the exclusive DRR Binder System, with embedded lubricants ensuring consistent running and reliable performance, combined with its anti-static design enhancing durability, the Fujifilm 2HD is the ideal low cost back-up solution.

## Specifications

	Zip™ 100	Zip™ 250	Zip™ 750		Basic HD		Basic HD
Storage capacity	100MB (formatted)	250MB (formatted)	750MB (formatted)	Magnetic particle	BERIDOX hyper HD	Transfer rate	500 KB/s
Sustained transfer rate	up to 1.4MB/s	up to 2.4MB/s	up to 7.5MB/s	Coercivity	720 Oe (nominal)	Disk rotation	360/300 rpm
Media	Fujifilm ATOMM media			Recording sides	Double-sided	Disk diameter	85.8 ± 0.2 mm
Magnet particles	Super-stabilised Fine Metal Particles			Recording density	High density	Total thickness	
Basefilm	PET	PET	PET	Tracks/disk	80 x 2	of disk	77 µm (nominal)
Dimensions (W x H x D)	97mm x 98.5mm x 6mm			Track density	135 tpi	Thickness of	
Weight approx.	45g	45g	45g	Recording method	MFM	coating	0.9 µm (nominal)
Temperature	10-32°C	10-32°C	10-32°C	Max. recording density	174 Kbpi	Outer dimension	90 x 94 x 3.3 mm
Humidity	20-80% RH (non-condensing)			Memory capacity			
				unformatted	2.0MB		

# VIDEO RANGE

The Fujifilm VHS tape range covers all the bases to ensure your recordings are of excellent quality. From general recording, to enthusiast, to professional – Fujifilm has got it in the can!





## F

The ideal all-purpose tape. Tough and durable for everyday recording needs.

- F E-180 Single, Twin, Triple, & Five Pack
- F E-240 Twin, Triple & Five Pack

## Specifications

	F		F
Magnetic Particles	Fine Grain BERIDOX	Surface resistance	$8 \times 10^7 \Omega/\text{SQ}$
Base Material	Smooth Polyester Base	Stop motion	Capable of exceeding 1 hour
<b>Dimensional Properties</b>		<b>Magnetic Properties</b>	
Tape width	12.65 mm (0.498 inch)	Coercivity (Hc)	54.0 KA/m
Fluctuation	2.0 $\mu\text{m}$ (p-p)	Retentivity (Br)	120 mT
Thickness	17.5 $\mu\text{m}$	<b>Video Performance</b>	
Magnetic layer thickness	4.0 $\mu\text{m}$	Video RF sensitivity	+0.0 dB (0MHz)
<b>Physical Properties</b>		Video S/N (B/W)	+0.0 dB
Yield strength	25.5 N (2.6kg)	Colour S/N	+0.0 dB
		Chroma output	+0.5 dB



## HQ+

Ideal for general purpose taping such as time shifting and recording your favourite programmes and films.

- HQ+ E-30 Single
- HQ+ E-60 Single
- HQ+ E-120 Single
- HQ+ E-180 Single & Twin Pack
- HQ+ E-240 Single



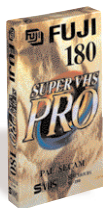
## SHG

The kind of sharp and vivid colours you look for when adding to your personal video collection.

- SHG E-30 Single
- SHG E-60 Single
- SHG E-120 Single
- SHG E-180 Single & Twin Pack
- SHG E-240 Single

## Specifications

	HQ+	SHG		HQ+	SHG
Magnetic Particles	Fine Grain BERIDOX	Superfine-grain BERIDOX	Surface resistance	$8 \times 10^7 \Omega/\text{SQ}$	$1 \times 10^8 \Omega/\text{SQ}$
Base Material	Smooth Polyester Base	Ultra-Smooth Polyester Base	Stop motion	Capable of exceeding 1 hour	
<b>Dimensional Properties</b>			<b>Magnetic Properties</b>		
Tape width	12.65 mm (0.498 inch)	12.65 mm (0.498 inch)	Coercivity (Hc)	55.3 KA/m	58.1 KA/m
Fluctuation	2.0 $\mu\text{m}$ (p-p)	2.0 $\mu\text{m}$ (p-p)	Retentivity (Br)	120 mT	120 mT
Thickness	17.5 $\mu\text{m}$	17.5 $\mu\text{m}$	<b>Video Performance</b>		
Magnetic layer thickness	4.0 $\mu\text{m}$	4.0 $\mu\text{m}$	Video RF sensitivity	+1.0 dB (4MHz)	+4.0 dB (4MHz)
<b>Physical Properties</b>			Video S/N (B/W)	+0.5 dB	+3.0 dB
Yield strength	25.5 N (2.6kg)	25.5 N (2.6kg)	Colour S/N	+0.5 dB	+3.0 dB
			Chroma output	+2.0 dB	+4.0 dB



## S-VHS Pro

Ultra sharp images and stereo sound make all the difference with your high-resolution Super VHS video recorder.

- S-VHS PRO SE-30 Single
- S-VHS PRO SE-60 Single
- S-VHS PRO SE-120 Single
- S-VHS PRO SE-180 Single
- S-VHS PRO SE-240 Single

## Specifications

	S-VHS Pro		S-VHS Pro
Magnetic Particles	a-BERIDOX	Surface resistance	$1 \times 10^9 \Omega/\text{SQ}$
Base Material	S-VHS Ultra-Smooth Polyester Base	Stop motion	Capable of exceeding 1 hour
<b>Dimensional Properties</b>		<b>Magnetic Properties</b>	
Tape width	12.65 mm (0.498 inch)	Coercivity (Hc)	67.2 KA/m
Fluctuation	2.0 $\mu\text{m}$ (p-p)	Retentivity (Br)	170 mT
Thickness	18.0 $\mu\text{m}$	<b>Video Performance</b>	
Magnetic layer thickness	3.5 $\mu\text{m}$	Video RF sensitivity	+2.5 dB (7MHz)
<b>Physical Properties</b>		Video S/N (B/W)	+1.5 dB
Yield strength	25.5 N (2.6kg)	Colour S/N	+1.0 dB
		Chroma output	+2.0 dB

# CAMCORDER RANGE

Put yourself in the picture! Secure your treasured memories with Fujifilm's first-class camcorder tape range.





# 8CM DVD



## 8CM DVD

Fujifilm 8cm DVD-R discs are perfect for storing your favourite videos, photos and data so you can enjoy them anywhere, anytime, with any camcorder, PC drive, recorder or player that supports the DVD-R or DVD-RW format. The 8cm DVD-R has an 'anti-scratch' coating on the recording surface for protection, making them easy to handle. With our 8cm DVD-RW disc you can record your most precious memories, save your recordings to a disc or PC, clear your 8cm DVD-RW and you're ready to start again.

## Specifications

	8CM DVD-R	8CM DVD-RW		8CM DVD-R	8CM DVD-RW
Capacity (unformatted)	1.4GB	1.4GB	Track pitch	0.74 $\mu\text{m}$	0.74 $\mu\text{m}$
Video record	30 min. (standard mode)		Minimum pit length	0.4 $\mu\text{m}$	0.4 $\mu\text{m}$
Substrate material	Polycarbonate		Recording speed	Up to 4x	Up to 2x
Recording layer	Organic dye	Phase change	Temperature	-5 – 55°C	-5 – 55°C
Outer diameter	80.0 mm	80.0 mm	Humidity	3 – 95% RH (No dew condensation)	
Inner diameter	15.0 mm	15.0 mm			
Thickness	1.2 mm (0.6 x 2)	1.2 mm (0.6 x 2)			
Recording wavelength	650 nm	650 nm			
Reflectivity	45 – 85%	18 – 30%			

# DVC Tapes

# 8mm Tapes



## DVC

Designed exclusively for DVC camcorders, Fujifilm's Mini DV Cassette, available in 60 or 80 minute lengths, is the ideal tape for a wide range of high-end video applications, including editing. Its compact design and exceptional performance qualifies it to be the ultimate choice in digital video.

- DVC 60 Single
- DVC 60 Five Pack Blister
- DVC 60 Triple Pack Coloured
- DVC 80 Single
- DVC 60 Five Pack Coloured



## Digital 8

Digital 8 – a camcorder cassette that is specialised for the Digital 8 format, with outstanding realistic images and dynamic digital sound.

- Digital 8 SP60 Single

## Specifications

	DVC	Digital 8	Digital 8
<b>Physical Properties</b>		<b>Magnetic particle</b>	<b>Physical Properties</b>
Tape width	6.35mm	Upper layer (U) SUPER METALLIX	Yield strength 14.7 N (1.5kg)
Thickness	7 $\mu$ m	Lower layer (L) BERIDOX-Hi	Surface resistance $1 \times 10^{10} \Omega/\text{SQ}$
Transparency	Less than 5%	Base Material Ultra-smooth Polyester Base	Stop motion Capable of exceeding 1 hour
<b>Magnetic Properties</b>		<b>Dimensional Properties</b>	<b>Magnetic Properties</b>
Coercivity (Hc)	120 KA/m	Tape width 8mm	Coercivity (Hc) 135 KA/m
Retentivity (Br)	250 mT	Fluctuation 2 $\mu$ m (p-p)	Retentivity (Br) 300 mT
Squareness (Br/Bm)	0.8	Thickness 10.5 $\mu$ m	
<b>Recording Characteristics</b>		Magnetic (U) 0.4 $\mu$ m	
Optimum Recording Current	0dB	layer thickness (L) 2.5 $\mu$ m	
Data Signal Output Level (21MHz)	More than -1dB		

# 8mm Tapes



## Hi-8 MP

Professional quality Hi-8 cassette for use with high resolution Hi-8 video systems.

- Hi-8 MP P5-30 Single
- Hi-8 MP P5-60 Single
- Hi-8 MP P5-90 Single



## Hi-8 ME

Precision performance makes this the tape for recording your most-memorable occasions.

- Hi-8 MEP E5-90 Single

## Specifications

	Hi-8 MP	Hi-8 ME		Hi-8 MP	Hi-8 ME
Magnetic Particles			Surface resistance	1 x 10 <sup>10</sup> Ω/SQ	3 x 10 <sup>8</sup> Ω/SQ
Upper layer (U)		Super	Stop motion	Capable of exceeding 1 hour	
	METALLIX-Hi	METALLIX	Magnetic Properties		
Lower layer (L)	BERIDOX-Hi	TITAN Fine	Coercivity (Hc)	(U) 127 KA/m	
Base Material	Ultra-smooth	Ultra-smooth		(L) 64 KA/m	135 KA/m
	DSS base	polyester base	Retentivity (Br)	(U) 290 mT	
Dimensional Properties				(L) 170 mT	300 mT
Tape width	8 mm	8 mm	Video Performance		
Fluctuation	2.0 μm (p-p)	2.0 μm (p-p)	Video RF sensitivity	+2.5 dB (7MHz)	+5.0 dB (7MHz)
Thickness	10.5 μm	10.5 μm	Video S/N (B/W)	+1.0 dB	+2.0 dB
Magnetic	(U) 0.4 μm	(U) 0.3 μm	Colour S/N	+1.0 dB	+1.5 dB
layer thickness	(L) 2.5 μm	(L) 2.6 μm	Chroma output	+2.0 dB	+2.0 dB
Physical Properties					
Yield strength	14.7 N (1.5kg)	14.7 N (1.5kg)			

# 8mm Tapes



## MP

The high quality standard grade cassette ideal for everyday use with an 8mm camcorder.

- MP P5-30 8mm Single
- MP P5-60 8mm Single
- MP P5-90 8mm Single, Twin and Four Pack



## SHG

Sharp, clear images and lasting durability for preserving memories of those special occasions.

- P5-60 SHG Single
- P5-90 SHG Single

## Specifications

	MP	SHG		MP	SHG
<b>Magnetic Particles</b>			Surface resistance	$3 \times 10^{10} \Omega/\text{SQ}$	$3 \times 10^{10} \Omega/\text{SQ}$
Upper layer (U)	METALLIX	METALLIX	Stop motion	Capable of exceeding 1 hour	
Lower layer (L)	BERIDOX	BERIDOX	<b>Magnetic Properties</b>		
Base Material	Ultra-smooth DSS base	Ultra-smooth DSS base	Coercivity (Hc)	(U) 127 KA/m (L) 64 KA/m	(U) 127 KA/m (L) 64 KA/m
<b>Dimensional Properties</b>			Retentivity (Br)	(U) 280 mT (L) 140 mT	(U) 285 mT (L) 150 mT
Tape width	8 mm	8 mm	<b>Video Performance</b>		
Fluctuation	2.0 $\mu\text{m}$ (p-p)	2.0 $\mu\text{m}$ (p-p)	Video RF sensitivity	+3.0 dB (5MHz)	+4.0 dB (5MHz)
Thickness	10.5 $\mu\text{m}$	10.5 $\mu\text{m}$	Video S/N (B/W)	+2.5 dB	+3.5 dB
Magnetic layer thickness	(U) 0.4 $\mu\text{m}$ (L) 2.0 $\mu\text{m}$	(U) 0.4 $\mu\text{m}$ (L) 2.0 $\mu\text{m}$	Colour S/N	+1.7 dB	+2.6 dB
<b>Physical Properties</b>			Chroma output	+3.7 dB	+4.0 dB
Yield strength	14.7 N (1.5kg)	14.7 N (1.5kg)			

# VHS-C



## HQ+

A high quality, general purpose camcorder cassette for everyday use.

- HQ+ EC30 Single
- HQ+ EC45 Single



## SHG

Super High Grade recording and playback, perfect for your compact VHS camcorder system.

- VHS-C SHG EC30 Single
- VHS-C SHG EC45 Single, Twin and Five Pack
- VHS-C SHG EC60 Single



## S-VHS PRO

Ultra sharp images and stereo sound make all the difference with your high-resolution Super VHS camcorder.

- S-VHS-C PRO SEC45 Single

## Specifications

	HQ+	SHG	S-VHS PRO		HQ+	SHG	S-VHS PRO
Magnetic Particles	Fine-Grain BERIDOX	Superfine-grain BERIDOX	a-BERIDOX	Surface resistance	8x10 <sup>7</sup> Ω/SQ	1x10 <sup>8</sup> Ω/SQ	1x10 <sup>9</sup> Ω/SQ
Base Material		S-VHS		Stop motion	Capable of exceeding 1 hour		
	Smooth Polyester Base	Ultra-Smooth Polyester Base	Ultra-Smooth Polyester Base	Magnetic Properties			
				Coercivity (Hc)	55.3 KA/m	58.1 KA/m	67.2 KA/m
				Retentivity (Br)	120 mT	120 mT	170 mT
Dimensional Properties				Video Performance			
Tape width	12.65 mm	12.65 mm (0.498 inch)	12.65 mm (0.498 inch)	Video RF sensitivity	+1.0 dB (4MHz)	+4.0 dB (4MHz)	+2.4 dB (4MHz)
Fluctuation	2.0 μm (p-p)	2.0 μm (p-p)	2.0 μm (p-p)	Video S/N (B/W)	+0.5 dB	+3.0 dB	+1.5 dB
Thickness	17.5 μm	17.5 μm	18.0 μm	Colour S/N	+0.5 dB	+3.0 dB	+1.0 dB
Magnetic layer thickness	4.0 μm	4.0 μm	3.5 μm	Chroma output	+2.0 dB	+4.0 dB	+2.0 dB
Physical Properties							
Yield strength	25.5 N (2.6kg)	25.5 N (2.6kg)	25.5 N (2.6kg)				

# AUDIO RANGE

For the ultimate in recording, Fujifilm's audio range makes sound sense!





## CD-R Audio Pro

Fujifilm's Rotation Stabiliser technology reduces unwanted vibration and enhances the tonal quality of our Audio CD-R Pro discs. Fujifilm's Audio CD-R has an extremely low error rate and is capable of satisfying a range of writing conditions. The perfect solution to your digital audio recording – both professional and domestic.

- CD-R Audio Pro 80 min x 10 Pack
- CD-R Audio Pro 80 min 25 Disc Spindle

## Specifications

	CD-R Audio Pro		CD-R Audio Pro
Format	Orange Book Part II	Recording areas	44.7-118 mm (maximum)
Capacity*	650MB/700MB	Optimum write power	6-7 mw (Laser W/L = 790 nm, Lens = 0.5)
Recording length	74/80 min.	Block error	Less than 20 eps
Linear velocity	1.2 m/s	Jitter	22-23
Track pitch	1.6 $\mu$ m / 1.5 $\mu$ m	Number of readings	More than 10 <sup>5</sup> times
Substrate	Polycarbonate	*The value is in the case of Mode 1 recording, capacity varies by the format in use.	
Recording layer	Organic dye		
Outer diameter	120 $\pm$ 0.3 mm		
Inner diameter	15 + 0.1/-0.0 mm		
Thickness	1.2 + 0.3/-0.1 mm		

# MINIDISC



## MiniDisc™

Fujifilm MiniDiscs are made to withstand repeated recording and playback. With an extremely low block error rate, Fujifilm's MiniDiscs easily surpass the industry standard for recording power margin. A high performance, highly durable disc protection layer safeguards your music from environmental extremes, while added lubrication ensures smooth spinning.

- MD 74 min/MD 80 min Black Five Pack Box

## Specifications

MiniDiscs		MiniDiscs	
<b>Physical Characteristics</b>			
Substrate thickness	1.2 mm	Recording laser power	4.55 mW
Disc diameter	Ø 64.8 mm	Recording power margin	+18/-20% or more (standard)
Centre ring diameter	Ø 11.0 mm	C/N ratio	≥ 46 dB
Recordable area	Ø 32 – 61 mm	<b>Data Error Rate</b>	
Track pitch	1.6 (spiral) µm	Error correction	Block error rate ≤ 3 x 10 <sup>-2</sup>
Cartridge dimensions	W72 x D68 x H5 mm	<b>Disc Life Expectancy</b>	
Weight	18 g	Possible repetitive playback times	> 10 <sup>5</sup> times
Skew	< 10 mrad	Possible repetitive recording times	> 10 <sup>5</sup> times
Track eccentricity	Within ± 50 µm	<b>Environmental Conditions</b>	
<b>Optical Characteristics</b>		Recording / playback conditions*	-25°C–70°C, 10–95% RH
Disc double refraction	< 100 nm		
<b>Recording/Playback Signal Characteristics</b>			
Playback laser power	0.7 mW		

\*Absolute humidity is under 60 g/m<sup>3</sup>



# AUDIO TAPE



## DR Ferric

The favourite choice for all-round sound quality. Extraslim Case.

- DR C-46 Single
- DR C-60 Single & Triple Pack
- DR C-90 Single, Triple & Five Pack

## Specifications

DR		DR	
Tape Position	Normal	Erase	74.0
Magnetic Particles	Pure ferric	Output fluctuation	0.3
Structure of magnetic layer	Single	<b>Magnetic Properties</b>	
Base Material	Tensitized polyester	Coercivity (Hc)	28 KA/m
<b>Electro-Magnetic Properties</b>		Retentivity (Br)	130 mT
Maximum output level (315Hz)	+ 2.5	Squareness	0.84
Maximum output level (10Hz)	- 9.0	<b>Dimensional Properties</b>	
Sensitivity (315Hz)	- 1.0	Tape width	3.81 mm
Frequency response (10Hz)	0.0	Thickness	12 µm
Bias noise	- 55.0	Base thickness	7 µm
Print-through	58.0	Magnetic layer thickness	5 µm
		Breaking strength	10 N
		Residual elongation	Below 0.1%

# CARING FOR YOUR MEDIA

## » Caring for your Tapes

Manufactured to micron tolerances, the Fujifilm video cassette shell is a precision enclosure that offers smooth, sure tape delivery and winding.

The outer portion of the shell is made of durable resin to afford maximum protection from accidental scrapes or falls.

- Store video cassettes out of direct sunlight and away from other heat sources such as radiators. Heat and sunlight can affect a tape's magnetic properties and may cause it to warp.
- Store cassettes in a cool, dry environment. Moisture not only contaminates recordings, it can also damage hardware, especially head assemblies.
- To maximise the lifetime and achieve best quality performance from your Fujifilm video cassettes, the optimum storage/operating conditions are:

### Storage conditions:

room temperature 0-35°C

### Operating conditions:

room temperature 5-35°C  
40-60% humidity

- Prevent tape from coming into contact with dust or other foreign bodies. This is a major cause of dropouts on recordings. Particles of dust and dirt get between the video heads and the tape and impair (or prevent) the transmission of recorded information. Where possible, keep the VCR covered to avoid this type of contamination.
- Try not to allow cassettes to come into contact with strong magnetic fields (such as loudspeakers or transformers) as these can erase recorded information.
- Always fully rewind a video tape after use and prior to storage. This will minimise the possibility of tape damage.
- Never leave cassettes in a VCR when not in use as this can cause the tape to stretch or wrinkle – impairing recording and playback performance.
- Always return the tape to its protective sleeve. These are specially designed to provide maximum protection against dust and damage. Never leave tapes lying around out of their cases.
- Store tapes in an upright position. This avoids the slow warping effect that gravity has when tapes are stacked on top of each other.

# CARING FOR YOUR MEDIA

- Always handle tapes with care. The mechanism inside the plastic housing is delicate and rough handling may cause the tape to malfunction.
- Do not touch the tape surface as oil and sweat from your fingers will contaminate the tape and the video heads in the VCR and compromise performance.

## Troubleshooting...

### Symptoms, Causes, Remedies

There are four major causes of video cassette and machine malfunction: dirt, slack, improper loading or unloading and inadequate tape maintenance. Good care will prevent most difficulties, but when problems occur, use this user handbook to help identify them.

#### (A) Picture Instability Tape damage

Scratches, wrinkles and creases on the tape can result in dropouts, white streaks, or severe disturbance in the video image, as shown on the next page.

#### 1 Scratches

##### Causes:

Build-up of dust, other foreign material or scratches on the tape guide poles or recording/playback head can scratch the tape surface. Depending on the size of the scratches, dropouts or white streaks then appear in the video image.

##### Countermeasures:

Clean the VCR tape drive system with a special cleaning cassette. If picture distortion persists after cleaning or if scratches appear on the tape of new video cassettes, have your VCR examined at a professional service centre.

#### 2 Wrinkles

##### Causes:

- (a) Slack tape within the video cassette rides up on the loading guide pole guard when the VCR first begins to operate, resulting in wrinkling on the tape.
- (b) If your VCR is switched off while tape is loaded and left out of operation for a long period of time, the tape may become slack, resulting in the same problem as described in (a).

# CARING FOR YOUR MEDIA

- (c) During unloading, incompletely rewound tape is caught by the guard panel, causing wrinkling.

In addition, tape can also ride up on the guide pole guard and become wrinkled when the video cassette is not fully inserted into your VCR.

- (d) Capstan and pinchroller pressure may become unbalanced due to build-up of dust or other foreign matter.
- (e) The tape has been deliberately pulled out of the cassette and become unravelled. This may also cause wrinkles, resulting in unsatisfactory video images.

## Countermeasures:

- (a) Always check to make sure the tape has not become slack before inserting it into your VCR. If it has, take-up the slack by inserting your thumb into the reel hub and turning it until the tape comes to its end.
- (b) Remove video cassettes from the VCR when you want to keep them out of operation for a long period. It is also advisable to rewind video cassettes completely before sorting them.

After inserting a video cassette, push the cassette holder lid to make sure the cassette is fully set.

- (c) Have your VCR's capstan, pinchrollers and other parts of the drive system properly cleaned.
- (d) Never pull tape from the cassettes or take apart the cassette case. If a video cassette should need repair, contact a professional VCR service centre .



# CARING FOR YOUR MEDIA

## 3 Creases

### Causes:

- (a) Your VCR's take-up torque may be insufficient, thus throwing off proper timing between reel take-up and the tape driving action of the capstan and pinchrollers. The tape will then momentarily catch on the lower portion of the tape guide, and the capstan or pinchrollers may crease the tape.
- (b) If the VCR plug is accidentally pulled out of the electrical outlet while the cassette is in place and then left off for a period of time, the tape may be creased slightly by the tape guide.
- (c) If the tape inside the video cassette is slack, it may be damaged by the guard panel of the cassette case when the cassette is being loaded or unloaded.

### Countermeasures:

- (a) Talk to your VCR service centre and have them increase take-up torque.
- (b) Remove video cassettes from your recorder when not in use. The video cassette should also be fully rewound before removing.
- (c) Always take up any tape slack before loading a video cassette.

*Below. A scratch on the tape.*



*Below. Wrinkles on the tape.*



*Below. Creases on the tape.*



# CARING FOR YOUR MEDIA

## 4 Tape edge damage

Damage on the edges of the tape, as shown below, can result in problems with the tape drive, and distortion and instability in the video image and sound. The bottom edge of the tape is especially critical; if it is damaged severely, your VCR will not be able to track the control signals it contains, and severe picture instability will result. If the top edge of the tape is damaged, you will have trouble with the sound track.



### Causes:

- (a) The tape edge may be torn or scratched if the top or bottom of the tape supply opening of the cassette and the portion of the first tape guidepole are out of their correct positions with respect to each other.
- (b) If the tape is slack when loaded it may not meet the loading guide correctly and, as a result, it may ride up on the guide, damaging the tape edge in the process.

### Countermeasures:

- (a) Try using a new video cassette. If the edge is damaged again, professional recorder maintenance is required.

- (b) Always take up tape slack before loading a video cassette.

## (B) Other causes of picture instability

Severe distortion persists in the video image even after adjusting your VCR's tracking mechanism.

### Dust on control head

#### Causes:

Severe damage on the bottom edge of the tape can destroy the control signals necessary for correct tracking during video playback. Severe dust on the control head can also block correct reading of the control signals.

#### Countermeasures:

Clean the head with a special video headcleaning cassette. Also check to make sure the video cassette has not been damaged.

Always use high quality video cassettes.

## (C) No video image

You've recorded a video cassette, but no picture, or only an extremely blurry, highly distorted image appears upon playback.

# CARING FOR YOUR MEDIA

## Cause:

Your video cassette has two heads positioned equidistant from each other on the front and back of a cylinder. If dirt builds up on one of them, white lines will appear in the video image. If dirt collects on both, the entire image will appear white with almost no picture at all.

## Countermeasure:

Use a special video headcleaning cassette to remove build-up from heads. Avoid touching the heads with your fingers, as they can be damaged or thrown out of proper adjustment. If picture quality is still unsatisfactory after you've used a headcleaning cassette, consult your video cassette recorder service centre.

## (D) If the picture is still distorted...

So far, we've discussed tape damage and deformation and dirt build-up on the control and video heads as causes for picture instability, distortion, dropouts, etc. If you have checked 'A' through 'C' and still have not improved your picture, one of the following may be the problem.

## Causes:

- (a) There may be insufficient head-to-tape contact due to head imbalance, prolonged use or head damage.
- (b) Creases on the tape or irregularities in the magnetic coating may result in a distorted picture.

**Top.** White lines, called 'noise', covering the entire screen.

**Bottom.** Enough white noise lines can make the image completely unviewable.



# CARING FOR YOUR MEDIA

## Countermeasures:

- (a) Your video cassette recorder forms an image with two separate video heads. If one of them is defective or worn out, there will be insufficient head-to-tape contact, resulting in dropouts and streaking. Timely head maintenance is essential to performance.
- (b) Check the tape for damage. Selecting a high quality cassette is also essential to satisfactory performance.

## Other Mishaps and Countermeasures

### (E) Tape splitting

#### 1 Tape is split diagonally or vertically

##### Causes:

- (a) Tape is so slack it catches on the tape stabiliser guide or the loading guide and tears in two.
- (b) Metal particles may build up to a sharp edge on the capstan or pinchrollers and scratch into the tape. Sometimes these scratches can develop into a complete split.

##### Countermeasures:

- (a) Always take up tape slack before loading a video cassette.
- (b) Have the capstan, pinchrollers and guide system cleaned regularly at your service centre or your

dealer and remember: Your VCR and video cassettes are precision instruments; never attempt to take apart your recorder or service it yourself.



*A tape can split diagonally or vertically.*

#### 2 Tape is stretched and then splits

##### Causes:

Because the video cassette is not fully inserted or the tape is slack, excessive force concentrates on specific portions of the tape during loading and stretches and snaps the tape.



*A tape will split if stretched to its limits.*



# CARING FOR YOUR MEDIA

## Countermeasures:

Make sure the video cassette is fully inserted by pressing the cassette holder lid firmly before pushing the RECORD/PLAY button. Take up tape slack.

## (F) Tape sticks to cylinder

### Causes:

Condensation can form when a video cassette or recorder is brought into a warm room from the cold outside. The moisture that results may then cause the tape to stick to the head cylinder.

### Countermeasures:

Wait at least two hours until your recorder or video cassettes adjust to the change in temperature before using them.

## (G) Tape stops repeatedly at the same place

Your VHS-format tape stops repeatedly at the same place – other than the beginning or end of tape winding – during playback, fast forward or fast rewind.

### Causes:

The autostop mechanism on a VHS-format VCR uses a photosensitive cell that receives a light-beam transmission. The recorder stops automatically when it detects an area of the tape where the magnetic layer has been removed.

Check the area of the tape where operation stops.

## Countermeasures:

The magnetic layer can be peeled away by condensation causing the tape to stick to the cylinder, deliberately pulling the tape out of the cassette and scratching it by touching the tape surface. Take proper precautions.

## (H) Record button cannot be depressed

### Cause:

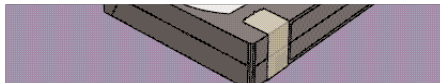
The erasure prevention tab is broken.

### Countermeasure:

Re-cover the erasure prevention tab with cellophane tape.

### Conclusion

Handle and store your tapes with care, regularly check and maintain your VCR and you can rest assured that your Fujifilm investment will deliver optimum performance.



*To re-record a tape after tab is broken cover with cellophane tape.*

# CARING FOR YOUR MEDIA

## » Caring for your Discs

Fujifilm's range of CDs and DVDs are manufactured to the highest standards, establishing superior performance and excellent durability for mass storage and a long archival life. To ensure your discs achieve maximum output there are a few precautions that can be taken when handling discs.

- Handle CDs and DVDs at the hub or outer edge. Do not bend the disc when taking it out of the case and be careful not to scratch it when placing back in the case or in the player.
- Do not touch the recording surface; avoid fingerprints or smears.
- If cleaning is required, use a soft dry cloth or special CD/DVD Cleaning Liquid or pure alcohol. Do not use any solvents.
- Although a scratched or dirty disc can't harm your player, it is recommended to keep these clean as it will also help in keeping the inside of your player clean.
- Never attempt to play a cracked disc as this could shatter and damage the player.
- If inscription is necessary, use a soft felt-tipped pen on the label area. Do not use a sharp or hard-tipped pen.

- For labelling, use only CD/DVD recommended labels.
- Always ensure discs are stored in the case provided, avoiding direct sunlight, excessive heat, humidity, pets, small children and other destructive forces.
- Store your discs at a temperature between -5°C to 55°C with less than 15°C variation per hour, at a relative humidity of between 10% to 90%.

# NOTES

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Dealer Stamp

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All specifications detailed in this brochure are correct at the time of going to press. Packaging may differ from that which is shown in this guide. Please contact Fujifilm before placing an order. Fujifilm reserves the right to alter details without prior notice.

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